

**LISTING OF CLAIMS**

Claims 1-85 are pending in the application. By the present amendment and response, claims 1, 3-23, 25-45, 47-67 and 69-85 are amended, claims 2, 24, 46 and 68 are cancelled and claims 86-108 are added. Please enter the following amendments and new claims:

1. (currently amended) A communication system, comprising:

a transmitter, comprising:

an excursion signal generator configured to identify an excursion event in a first signal exceeding a threshold and generate an excursion signal corresponding to the excursion event, wherein the excursion event is comprised of a plurality of signal samples having magnitudes which exceed the threshold;

a scaling system configured to adjust the magnitude of the excursion signal;

a filter system configured to filter the excursion signal;

a delay element configured to time align the excursion signal with the first signal;

an excursion reducer responsive to the excursion signal generator and configured to subtract the excursion signal from the first signal, wherein the excursion signal subtracted from the first signal is comprised of a plurality of signal samples having magnitudes which exceed the threshold; and

a receiver configured to receive the first signal.

2. (canceled)

3. (currently amended)     The [[A]] communication system according to claim [[2]] 1, wherein the filter system is configured to filter frequencies outside of a regulatory spectral mask.
4. (currently amended)     The [[A]] communication system according to claim [[2]] 1, wherein the filter system comprises more than one stage, and wherein each stage is configured to filter a channel of the first signal.
5. (currently amended)     The [[A]] communication system according to claim 4, wherein at least one stage includes a phase correction element configured to compensate for phase changes in the first signal.
6. (currently amended)     The [[A]] communication system according to claim 1, wherein the first signal is a wireless communication signal.
7. (currently amended)     The [[A]] communication system according to claim 1, wherein the first signal is a composite signal comprising a plurality of individual signals.
8. (currently amended)     The [[A]] communication system according to claim 1, wherein the excursion reducer is configured to subtract the excursion signal from the first signal without estimating at least one of a time, a magnitude, or a phase of a signal peak.

9. (currently amended)     The [[A]] communication system according to claim 1, wherein the excursion signal generator is configured to calculate a magnitude of the first signal, compare the magnitude to the threshold, and generate an excursion signal.

10. (currently amended)    The [[A]] communication system according to claim 9, wherein the excursion signal generator is further configured to add a pedestal to the excursion signal.

11. (currently amended)    The [[A]] communication system according to claim 10, wherein a magnitude of the pedestal is calculated according to at least two samples in the excursion.

12. (currently amended)    The [[A]] communication system according to claim 9, wherein the excursion signal corresponds to a difference between a magnitude of the first signal and the threshold if the magnitude of the first signal exceeds the threshold.

13. (currently amended)    The [[A]] communication system according to claim 9, wherein the excursion signal has a duration that is substantially identical to a duration of the excursion.

14. (currently amended)    The [[A]] communication system according to claim 1, wherein the excursion signal generator comprises:

a peak identification system configured to identify a peak in the first signal; and

a waveform generator responsive to the peak identification system and configured to generate the excursion signal according to at least one of the magnitude and the occurrence of the peak.

15. (currently amended) The [[A]] communication system according to claim 14, wherein the peak comprises a set of three consecutive samples, wherein the middle sample has a higher magnitude than the first and third samples.

16. (currently amended) The [[A]] communication system according to claim 14, wherein the waveform generator comprises:

a peak response system configured to generate the excursion signal; and  
~~a scaling system configured to adjust the magnitude of the excursion signal.~~

17. (currently amended) The [[A]] communication system according to claim 16, wherein the scaling system comprises a storage system storing a lookup table.

18. (currently amended) The [[A]] communication system according to claim 16, wherein the scaling system is configured to adjust the magnitude of the excursion signal according to the threshold, and wherein the threshold comprises a selected threshold from a plurality of thresholds.

19. (currently amended) The [[A]] communication system according to claim 16, wherein the scaling system is configured to adjust the magnitude of the excursion signal according to the magnitude of a proximate peak to the peak.

20. (currently amended) The [[A]] communication system according to claim 19, wherein the proximate peak is defined according to a selected range of samples from the peak.

21. (currently amended) The [[A]] communication system according to claim 19, wherein the scaling system is configured to adjust the magnitude of the excursion signal according to the relative magnitudes of the proximate peak and the peak.

22. (currently amended) The [[A]] communication system according to claim 1, wherein the transmitter further comprises a phase compensation system configured to compensate for phase changes in the first signal.

23. (currently amended) A signal processing system, comprising:  
an excursion signal generator configured to identify an excursion event in a main signal and generate an excursion signal corresponding to the excursion event, wherein the excursion event is comprised of a plurality of signal samples having magnitudes outside a defined parameter of the main signal;  
a scaling system configured to adjust the magnitude of the excursion signal;  
a filter system configured to filter the excursion signal;

a delay element configured to time align the excursion signal with the main signal; and

an excursion reducer configured to subtract the excursion from the main signal, wherein the excursion signal subtracted from the main signal is comprised of a plurality of signal samples outside the defined parameter of the main signal.

24. (canceled)

25. (currently amended) The [[A]] signal processing system according to claim 23 [[24]], wherein the filter system is configured to filter frequencies outside of a regulatory spectral mask.

26. (currently amended) The [[A]] signal processing system according to claim 23 [[24]], wherein the filter system comprises more than one stage, and wherein each stage is configured to filter a channel of the main signal.

27. (currently amended) The [[A]] signal processing system according to claim 26, wherein at least one stage includes a phase correction element configured to compensate for phase changes in the main signal.

28. (currently amended) The [[A]] signal processing system according to claim 23, wherein the main signal is a wireless communication signal.

29. (currently amended) The [[A]] signal processing system according to claim 23, wherein the main signal is a composite signal comprising a plurality of individual signals.

30. (currently amended) The [[A]] signal processing system according to claim 23, wherein the excursion reducer is configured to subtract the excursion signal from the main signal without estimating an occurrence of a signal peak.

31. (currently amended) The [[A]] signal processing system according to claim 23, wherein the excursion signal generator is configured to calculate a magnitude of the main signal, compare the magnitude to a threshold, and generate an excursion signal.

32. (currently amended) The [[A]] signal processing system according to claim 31, wherein the excursion signal generator is further configured to add a pedestal to the excursion signal.

33. (currently amended) The [[A]] signal processing system according to claim 32, wherein a magnitude of the pedestal is calculated according to at least two samples in the excursion.

34. (currently amended) The [[A]] signal processing system according to claim 31, wherein the excursion signal corresponds to a difference between a magnitude of the main signal and the threshold if the magnitude of the main signal exceeds the threshold.

35. (currently amended) The [[A]] signal processing system according to claim 31, wherein the excursion signal has a duration that is substantially identical to a duration of the excursion.

36. (currently amended) The [[A]] signal processing system according to claim 23, wherein the excursion signal generator comprises:

a peak identification system configured to identify a peak in the main ~~first~~ signal;  
and

a waveform generator responsive to the peak identification system and configured to generate the excursion signal according to at least one of the magnitude and the occurrence of the peak.

37. (currently amended) The [[A]] signal processing system according to claim 36, wherein the peak comprises a set of three consecutive samples, wherein the middle sample has a higher magnitude than the first and third samples.

38. (currently amended) The [[A]] signal processing system according to claim 36, wherein the waveform generator comprises:

a peak response system configured to generate the excursion signal; ~~and~~  
~~a scaling system configured to adjust the magnitude of the excursion signal.~~

39. (currently amended) The [[A]] signal processing system according to claim 38, wherein the scaling system comprises a storage system storing a lookup table.

40. (currently amended) The ~~[[A]]~~ signal processing system according to claim 38, wherein the scaling system is configured to adjust the magnitude of the excursion signal according to the defined parameter of the main signal ~~threshold~~, and wherein the defined parameter ~~threshold~~ comprises a selected parameter ~~threshold~~ from a plurality of parameters ~~thresholds~~.

41. (currently amended) The ~~[[A]]~~ signal processing system according to claim 38, wherein the scaling system is configured to adjust the magnitude of the excursion signal according to the magnitude of a proximate peak to the peak.

42. (currently amended) The ~~[[A]]~~ signal processing system according to claim 41, wherein the proximate peak is defined according to a selected range of samples from the peak.

43. (currently amended) The ~~[[A]]~~ signal processing system according to claim 41, wherein the scaling system is configured to adjust the magnitude of the excursion signal according to the relative magnitudes of the proximate peak and the peak.

44. (currently amended) The ~~[[A]]~~ signal processing system according to claim 23, wherein the transmitter further comprises a phase compensation system configured to compensate for phase changes in the main signal.

45. (currently amended) A transmitter system comprising:

an excursion signal generator configured to identify an excursion event in a main signal and generate an excursion signal corresponding to the excursion event, wherein the excursion event is comprised of a plurality of signal samples having magnitudes outside a defined parameter of the main signal;

a scaling system configured to adjust the magnitude of the excursion signal;

a filter system configured to filter the excursion signal;

a delay element configured to time align the excursion signal with the main signal;

an excursion reducer configured to subtract the excursion from the main signal, wherein the excursion subtracted from the main signal is comprised of a plurality of signal samples outside the defined parameter of the main signal; and

an amplifier configured to amplify the main signal.

46. (canceled)

47. (currently amended) The [[A]] transmitter system according to claim 45 [[46]], wherein the filter system is configured to filter frequencies outside of a regulatory spectral mask.

48. (currently amended) The [[A]] transmitter system according to claim 45 [[46]], wherein the filter system comprises more than one stage, and wherein each stage is configured to filter a channel of the main signal.

49. (currently amended) The [[A]] transmitter system according to claim 48, wherein at least one stage includes a phase correction element configured to compensate for phase changes in the main signal.

50. (currently amended) The [[A]] transmitter system according to claim 45, wherein the main signal is a wireless communication signal.

51. (currently amended) The [[A]] transmitter system according to claim 45, wherein the main signal is a composite signal comprising a plurality of individual signals.

52. (currently amended) The [[A]] transmitter system according to claim 45, wherein the excursion reducer is configured to subtract the excursion signal from the main signal without estimating an occurrence of a signal peak.

53. (currently amended) The [[A]] transmitter system according to claim 45, wherein the excursion signal generator is configured to calculate a magnitude of the main signal, compare the magnitude to a threshold, and generate an excursion signal.

54.(currently amended) The [[A]] transmitter system according to claim 53, wherein the excursion signal generator is further configured to add a pedestal to the excursion signal.

55. (currently amended) The [[A]] transmitter system according to claim 54, wherein a magnitude of the pedestal is calculated according to at least two samples in the excursion.

56. (currently amended) The [[A]] transmitter system according to claim 53, wherein the excursion signal corresponds to a difference between a magnitude of the main signal and the threshold if the magnitude of the main signal exceeds the threshold.

57. (currently amended) The [[A]] transmitter system according to claim 53, wherein the excursion signal has a duration that is substantially identical to a duration of the excursion.

58. (currently amended) The [[A]] transmitter system according to claim 45, wherein the excursion signal generator comprises:

    a peak identification system configured to identify a peak in the main first signal;  
and

    a waveform generator responsive to the peak identification system and configured to generate the excursion signal according to at least one of the magnitude and the occurrence of the peak.

59. (currently amended) The [[A]] transmitter system according to claim 58, wherein the peak comprises a set of three consecutive samples, wherein the middle sample has a higher magnitude than the first and third samples.

60. (currently amended) The [[A]] transmitter system according to claim 58, wherein the waveform generator comprises:

a peak response system configured to generate the excursion signal; and

~~a scaling system configured to adjust the magnitude of the excursion signal.~~

61. (currently amended) The [[A]] transmitter system according to claim 60, wherein the scaling system comprises a storage system storing a lookup table.

62. (currently amended) The [[A]] transmitter system according to claim 60, wherein the scaling system is configured to adjust the magnitude of the excursion signal according to the defined parameter of the main signal threshold, and wherein the defined parameter threshold comprises a selected parameter threshold from a plurality of parameters thresholds.

63. (currently amended) The [[A]] transmitter system according to claim 60, wherein the scaling system is configured to adjust the magnitude of the excursion signal according to the magnitude of a proximate peak to the peak.

64. (currently amended) The [[A]] transmitter system according to claim 63, wherein the proximate peak is defined according to a selected range of samples from the peak.

65. (currently amended) The [[A]] transmitter system according to claim 63, wherein the scaling system is configured to adjust the magnitude of the excursion signal according to the relative magnitudes of the proximate peak and the peak.

66. (currently amended) The [[A]] transmitter system according to claim 45, wherein the transmitter further comprises a phase compensation system configured to compensate for phase changes in the main signal.

67. (currently amended) A method for processing signals, comprising:  
identifying an excursion event in a main signal and generating an excursion signal corresponding to the excursion event, wherein the excursion event is comprised of a plurality of signal samples having magnitudes outside a defined parameter of the main signal;

adjusting the magnitude of the excursion signal;

filtering the excursion signal;

time aligning the excursion signal with the main signal;

subtracting the excursion signal from the main signal, wherein the excursion signal subtracted from the main signal is comprised of a plurality of signal samples outside the defined parameter of the main signal.

68. (canceled)

69. (currently amended) The [[A]] method according to claim 67, wherein filtering the excursion signal comprises filtering frequencies outside of a spectral mask.

70. (currently amended) The [[A]] method according to claim 67, further comprising compensating for phase changes in the main signal.

71. (currently amended) The [[A]] method according to claim 67, wherein the main signal is a wireless communication signal.

72. (currently amended) The [[A]] method according to claim 67, wherein the main signal is a composite signal comprising a plurality of individual signals.

73. (currently amended) The [[A]] method according to claim 67, wherein subtracting the excursion from the main signal includes subtracting the excursion from the main signal without estimating an occurrence of a signal peak.

74. (currently amended) The [[A]] method according to claim 67, wherein identifying the excursion includes:

calculating a magnitude of the main signal;

comparing the magnitude to a threshold; and

generating an excursion signal according to the comparison of the magnitude to the threshold.

75. (currently amended) The [[A]] method according to claim 74, wherein identifying the excursion further includes adding a pedestal to the excursion signal.

76. (currently amended) The [[A]] method according to claim 75, wherein a magnitude of the pedestal is calculated according to at least two samples in the excursion.

77. (currently amended) The [[A]] method according to claim 74, wherein the excursion signal corresponds to a difference between the magnitude of the main signal and the threshold if the magnitude of the main signal exceeds the threshold.

78. (currently amended) The [[A]] method according to claim 74, wherein the excursion signal has a duration that is substantially identical to a duration of an excursion of the main signal beyond the threshold.

79. (currently amended) The [[A]] method according to claim 74, further comprising identifying a peak in the main first signal, and wherein generating the excursion signal comprises generating the excursion signal according to at least one of the magnitude and the occurrence of the peak.

80. (currently amended) The [[A]] method according to claim 79, wherein the peak comprises a set of three consecutive samples, wherein the middle sample has a higher magnitude than the first and third samples.

81. (currently amended) The [[A]] method according to claim 79 [[74]], further comprising adjusting the magnitude of the excursion signal according to the threshold, and wherein the threshold comprises a selected threshold from a plurality of thresholds.

82. (currently amended) The [[A]] method according to claim 79 [[74]], further comprising adjusting the magnitude of the excursion signal according to the magnitude of a proximate peak to the peak.

83. (currently amended) The [[A]] method according to claim 82, wherein the proximate peak is defined according to a selected range of samples from the peak.

84. (currently amended) The [[A]] method according to claim 82, wherein adjusting the magnitude of the excursion signal includes adjusting the magnitude of the excursion signal according to the relative magnitudes of the proximate peak and the peak.

85. (currently amended) The [[A]] method according to claim 67, further comprising compensating for magnitude changes in the main signal.

86. (new) A communication system, comprising:

an excursion signal generator configured to identify an excursion in a first signal exceeding a threshold, wherein the excursion signal generator comprises a peak identification system configured to identify a peak in the first signal and a waveform generator responsive to the peak identification system and configured to generate the

excursion signal according to at least one of the magnitude and the occurrence of the peak, wherein the peak comprises a set of three consecutive samples and wherein the middle sample has a higher magnitude than the first and third samples;

an excursion reducer responsive to the excursion signal generator and configured to subtract the excursion signal from the first signal; and

a receiver configured to receive the first signal.

87. (new) A communication system, comprising:

a transmitter, comprising:

an excursion signal generator configured to identify an excursion in a first signal exceeding a threshold, wherein the excursion signal generator comprises a peak identification system configured to identify a peak in the first signal and a waveform generator responsive to the peak identification system and configured to generate the excursion signal according to at least one of the magnitude and the occurrence of the peak, wherein the waveform generator comprises a peak response system configured to generate the excursion signal and a scaling system configured to adjust the magnitude of the excursion signal;

an excursion reducer responsive to the excursion signal generator and configured to subtract the excursion from the first signal; and

a receiver configured to receive the first signal.

88. (new) The communication system according to claim 87, wherein the scaling system comprises a storage system storing a lookup table.

89. (new) The communication system according to claim 87, wherein the scaling system is configured to adjust the magnitude of the excursion signal according to the threshold, and wherein the threshold comprises a selected threshold from a plurality of thresholds.

90. (new) The communication system according to claim 87, wherein the scaling system is configured to adjust the magnitude of the excursion signal according to the magnitude of a proximate peak to the peak.

91. (new) The communication system according to claim 90, wherein the proximate peak is defined according to a selected range of samples from the peak.

92. (new) The communication system according to claim 90, wherein the scaling system is configured to adjust the magnitude of the excursion signal according to the relative magnitudes of the proximate peak and the peak.

93. (new) A signal processing system, comprising:  
an excursion signal generator configured to identify an excursion signal in a main signal, wherein the excursion signal generator comprises a peak identification system configured to identify a peak in the main signal and a waveform generator responsive to the peak identification system and configured to generate the excursion signal according to at least one of the magnitude and the occurrence of the peak,

wherein the peak comprises a set of three consecutive samples, wherein the middle sample has a higher magnitude than the first and third samples; and

an excursion signal reducer configured to subtract the excursion from the main signal.

94.(new) A signal processing system, comprising:

an excursion signal generator configured to identify an excursion signal in a main signal, wherein the excursion signal generator comprises a peak identification system configured to identify a peak in the main signal and a waveform generator responsive to the peak identification system and configured to generate the excursion signal according to at least one of the magnitude and the occurrence of the peak, wherein the waveform generator comprises a peak response system configured to generate the excursion signal and a scaling system configured to adjust the magnitude of the excursion signal; and

an excursion signal reducer configured to subtract the excursion signal from the main signal.

95. (new) The signal processing system according to claim 94, wherein the scaling system comprises a storage system storing a lookup table.

96. (new) The signal processing system according to claim 94, wherein the scaling system is configured to adjust the magnitude of the excursion signal according to a

signal magnitude threshold, and wherein the threshold comprises a selected threshold from a plurality of thresholds.

97. (new) The signal processing system according to claim 94, wherein the scaling system is configured to adjust the magnitude of the excursion signal according to the magnitude of a proximate peak to the peak.

98. (new) The signal processing system according to claim 97, wherein the proximate peak is defined according to a selected range of samples from the peak.

99. (new) The signal processing system according to claim 97, wherein the scaling system is configured to adjust the magnitude of the excursion signal according to the relative magnitudes of the proximate peak and the peak.

100. (new) A transmitter system, comprising:

an excursion signal generator configured to identify an excursion signal in a main signal, wherein the excursion signal generator comprises a peak identification system configured to identify a peak in the main signal and a waveform generator responsive to the peak identification system and configured to generate the excursion signal according to at least one of the magnitude and the occurrence of the peak, wherein the peak comprises a set of three consecutive samples, wherein the middle sample has a higher magnitude than the first and third samples;

an excursion signal reducer configured to subtract the excursion signal from the main signal; and

an amplifier configured to amplify the signal.

101. (new) A transmitter system, comprising:

an excursion signal generator configured to identify an excursion in a main signal, wherein the excursion signal generator comprises a peak identification system configured to identify a peak in the main signal and a waveform generator responsive to the peak identification system and configured to generate the excursion signal according to at least one of the magnitude and the occurrence of the peak, wherein the waveform generator comprises a peak response system configured to generate the excursion signal and a scaling system configured to adjust the magnitude of the excursion signal;

an excursion reducer configured to subtract the excursion signal from the main signal; and

an amplifier configured to amplify the signal.

102. (new) The transmitter system according to claim 101, wherein the scaling system comprises a storage system storing a lookup table.

103. (new) The transmitter system according to claim 101, wherein the scaling system is configured to adjust the magnitude of the excursion signal according to a

signal magnitude threshold, and wherein the threshold comprises a selected threshold from a plurality of thresholds.

104. (new) The transmitter system according to claim 101, wherein the scaling system is configured to adjust the magnitude of the excursion signal according to the magnitude of a proximate peak to the peak.

105. (new) The transmitter system according to claim 104, wherein the proximate peak is defined according to a selected range of samples from the peak.

106. (new) The transmitter system according to claim 104, wherein the scaling system is configured to adjust the magnitude of the excursion signal according to the relative magnitudes of the proximate peak and the peak.

107. (new) A method for processing signals, comprising:

identifying an excursion in a main signal, wherein identifying the excursion includes calculating a magnitude of the main signal, comparing the magnitude to a threshold and generating an excursion signal according to the comparison of the magnitude to the threshold, and wherein generating the excursion signal comprises identifying a peak in the main signal and generating the excursion signal according to at least one of the magnitude and the occurrence of the peak, wherein the peak comprises a set of three consecutive samples, wherein the middle sample has a higher magnitude than the first and third samples; and

subtracting the excursion signal from the main signal.

108. (new) A method for processing signals, comprising:

identifying an excursion in a main signal, wherein identifying the excursion signal includes calculating a magnitude of the main signal, comparing the magnitude to a threshold and generating an excursion signal according to the comparison of the magnitude to the threshold, and wherein generating the excursion signal comprises identifying a peak in the main signal and generating the excursion signal according to at least one of the magnitude and the occurrence of the peak;

adjusting the magnitude of the excursion signal according to the relative magnitudes of a proximate peak and the peak; and

subtracting the excursion signal from the main signal.